

### REMARKS

Claims 1-2, 6, 14 and 28-29 have been amended. Claim 51 is new. Support for the amendments to claims 1, 14 and 28 and new claim 51 can be found in claim 14 as originally filed and in the specification at page 5, lines 9-15 (see also paragraph 18 of the corresponding U.S. Publication No. 2005/0067949). Applicant respectfully requests entry of the claim amendments and reconsideration in view of the foregoing amendments and these remarks.

#### Section 112 Rejections

Claims 2 and 29 were rejected under 35 U.S.C. § 112, ¶ 2, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 2 and 29 have been amended to recited "at least one organic polymer" instead of "said plurality of organic polymers". Applicant respectfully requests withdrawal of the section 112 rejection in light of the amendments.

#### Section 102 Rejections

Claims 1-5, 8-9, 15-16, 28-33, 35 and 38-39 are rejected as being anticipated by WO 02/069119 ("Lyon"). Applicant respectfully disagrees in light of the amendments made to claims 1 and 28.

Amended claim 1 requires depositing an organic polymer solution, the solution including a first solvent, at least one organic polymer, a second solvent and a third solvent. The first solvent has a high solubility and a faster evaporation rate than said second solvent, the second solvent has a very low solubility, and the third solvent has a surface tension less than 30 dynes/cm and is less than about twenty weight percent of the solution.

Lyon describes forming a solvent system for an electroluminescent polymer using a first solvent having a relatively high boiling point (between 130 and 300°C) and a second solvent component having a relatively low boiling point (100 to 200°C) (bottom of page 2, pages 3-4). Lyon also suggests using a solvent blend consisting of 44 vol. % mixed isomers of xylene (b.p.:

138°C); 40 vol. % 1,2,4-trimethylbenzene (b.p.:168°C) and 20 vol.% 3-isopropylbiphenyl (b.p.:295°C) (bottom half of page 8).

Lyon fails to suggest or disclose a solution that includes a third solvent that has a surface tension less than 30 dynes/cm and is less than about twenty weight percent of the solution. The only description of a three solvent solution in Lyon is found on page 8. Of the three solvents, two of the components make up 40 vol. % of the solution, xylene and 1,2,4-trimethylbenzene. 40 vol. % is not less than about twenty weight percent of the solution, as required by amended claim 1. The third solvent is 3-isopropylbiphenyl. Lyon does not provide the surface tension of 3-isopropylbiphenyl. However, Volkov (Volkov, N.B., "Surface Tension of Monoisopropylbiphenyl", J. of Phys. Chem. 45(1), (1971), which accompanies this response) measured the surface tension of monoisopropylbiphenyl, which is believed to include a mixture of 3-isopropylbiphenyl, 2-isopropylbiphenyl and 4-isopropylbiphenyl. According to Volkov's measurements, at room temperature monoisopropylbiphenyl has a surface tension that is greater than 30 dynes/cm. (At 20°C, the surface tension of monoisopropylbiphenyl is calculated to be 35 dynes/cm.) For at least this reason, applicant submits that Lyon does not anticipate claim 1 as amended. Claims 2-5, 8-9 and 15-16 depend from claim 1 and are similarly not anticipated.

Amended claim 28 requires a third solvent that has a surface tension less than 30 dynes/cm and is less than about twenty weight percent of the solution. For at least the same reasons as provided above with respect to claim 1, applicant submits that claim 28, as well as claims 29-33, 35 and 38-39, which depend therefrom, are not anticipated by Lyon.

Applicant respectfully requests withdrawal of the anticipation rejections.

### Section 103 Rejections

Claims 6-7 are rejected as being obvious and therefore unpatentable over Lyon alone or in view of Applicant's Prior Art. Claim 14 is rejected as being obvious and therefore unpatentable over Lyon in view of Applicant's background and [www.surface-tension.de](http://www.surface-tension.de). Claims 10-11 and 34 are rejected as being obvious and therefore unpatentable over Lyon in view of U.S. 6,916,902 ("Inbasekaran").

Each of the claims requires a third solvent that has a surface tension less than 30 dynes/cm and is less than about twenty weight percent of the solution. Applicant's background does not suggest a solution with a third solvent. www.surface-tension.de merely provides a list of surface tensions at 20°C in mN/m and therefore does not provide motivation to add a third solvent with specific peroperties, as required by the claims. Inbasekaran teaches that "the invention is a composition comprising a polymer . . . of the invention in a solvent" (col. 10, lines 26-39). Inbasekaran goes on to list possible solvents that could be used with the polymers of the invention. However, using a mix of solvents with particular evaporation rates, surface tensions or that comprise a specific amount of the solution, does not appear to be contemplated.

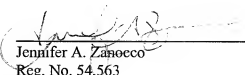
For at least this reason, applicant submits that no *prima facie* case of obviousness has been made with respect to claims 6-7, 10-11, 14 and 34 after the amendment of claim 1. Applicant respectfully requests withdrawal of the obviousness rejections.

The excess claims fees in the amount of \$50 and the two-month extension of time fee in the amount of \$450 are being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date:

November 30, 2006

  
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In addition, the vaporisation of the magnesium borides was investigated mass-spectrometrically; the composition of the gas phase was found, only magnesium ions being observed up to 1600°K. The saturated pressure of magnesium vapour over the boride phase was measured. From the vapour pressure and other thermodynamic characteristics the enthalpies of formation of the magnesium borides from the elements were calculated. The following values were obtained for the enthalpies of formation of the magnesium di-, tetra-, and hexa-borides: from the elements  $\Delta H^\circ(\text{MgB}_2)(\text{cryst}) = -19.1 \pm 7.2$  kcal g-formula<sup>-1</sup>;  $\Delta H^\circ[\text{MgB}_4(\text{cryst})] = -21.0 \pm 4.6$  kcal g-formula<sup>-1</sup>;  $\Delta H^\circ[\text{MgB}_6(\text{cryst})] = -26.0 \pm 3.5$  kcal g-formula<sup>-1</sup>.

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## Surface Tension of Monoisopropylbiphenyl

B.N. Volkov

The surface tension ( $\sigma$ ) of monoisopropylbiphenyl, with  $D_{30}^\circ = 0.9755$  g cm<sup>-3</sup>,  $n_D^{20} = 1.5751$ , has been measured by the capillary method in the range 20–390°C.  $\sigma$  was found by the equation

$$\sigma = \frac{\pi(D-d)}{2} \cdot \frac{\Delta H}{1/b_1 - 1/b_2},$$

where  $D$  is the density of the liquid (taken from Vargaftik<sup>1</sup>),  $d$  the density of the vapour (calculated by the equation of state for an ideal gas from the saturated vapour pressure after Vargaftik<sup>1</sup>),  $\Delta H$  the difference in the heights of the capillary rise in two capillaries of different diameters,  $b_1$  and  $b_2$  the radii of curvature of the menisci in the capillaries, calculated by successive approximations with Sugden's tables<sup>2</sup>. The results throughout the entire temperature range are described to within 0.15 dyn cm<sup>-1</sup> by the equation:

$$\sigma = 36.6037 - 7.9214 \cdot 10^{-4}t - 3.1477 \cdot 10^{-6}t^2 + 0.9549 \cdot 10^{-9}t^3.$$

We also found the McLeod-Bachinskii (1) and Eötvös (2) equations to apply to monoisopropylbiphenyl

$$\sigma = 245.8(D-d)^{2/3}, \quad (1)$$

$$\sigma T^{2/3} = 1988.8 - 2.5707. \quad (2)$$

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## Mechanism of Decomposition of Hydrogen Peroxide by Complexes of Copper(II) with 2,2'-Bipyridyl

T.P. Vorob'eva, V.M. Berdnikov, A.P. Purmal', and Yu.I. Skurlatov

The decomposition of  $\text{H}_2\text{O}_2$  by copper amines has a radical chain mechanism<sup>1,2</sup>. For the  $\text{Cu}^{2+}$ -Am- $\text{H}_2\text{O}_2$  system (where Am = amine) the classical method of inhibitors is applicable only when the rates of reaction of the radicals with the inhibitor and with the amine are commensurate. Low [Am] are possible only for stable complexes of  $\text{Cu}^{2+}$  with phthalocyanine, ethylenediamine tetraacetic acid and polyethylenamines, bipyridyl, and phenanthroline. The  $\text{Cu}^{2+}$ -2,2'-bipyridyl (Bipy) system is catalytically inactive in acid media and at  $\beta = [\text{Bipy}]_0/[\text{Cu}^{2+}]_0 > 3$ . With  $\beta < 3$  the decomposition of  $\text{H}_2\text{O}_2$

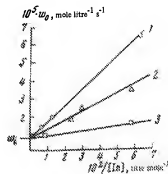


Figure 1. Determination of the rate of initiation of free radicals in the  $\text{Cu}^{2+}$ -Bipy- $\text{H}_2\text{O}_2$  system by the inhibitors method. 1) Acrylonitrile; 2) benzene; 3) hydroquinone;  $\beta = [\text{Bipy}]_0/[\text{Cu}^{2+}]_0 = 1$ ,  $[\text{Cu}^{2+}]_0 = 4.9 \times 10^{-3}$  M,  $[\text{H}_2\text{O}_2]_0 = 1$  M,  $t = 25^\circ\text{C}$ , pH = 6.6, phosphate buffer [3] =  $6.6 \times 10^{-2}$  M,  $v$  = volume of reaction solution = 6 ml.